

4. Complications accompanying the pneumonia.

(a), Alcoholic Delirium 7 cases, six got camphor, four died, one had no camphor and got well.

(b), Chronic Nephritis 2 cases, both camphor, both died.

(c), Pulmonary Tuberculosis 1 case, camphor, died.

Our basic rate of 30% mortality includes all cases entering with or having the disease regardless of complications. Taking into account the complicated cases and subtracting these ten we are left with the figure 17% for camphor cases, average age 49 years, and 5% for non-camphor cases average 30 years. The figure 5% is still quite low, but 17% for uncomplicated lobar pneumonia is an average, not at all an exceptional rate. I feel it justifiable to conclude that the camphor injections at least had no harmful effect upon the disease. Had there been any very great reaction to the camphor we should expect a superiority in results among those patients who received more than the average dose of 210 grains over those who got less. Classified according to dosage it was found that of those who received more than 210 grains 31% died and of those who received less 26% died, a trifling difference. It seems to us therefore that camphor has shown no effect good or bad upon the circulation or upon the disease itself.

Local complications from use of injections: Two patients did not absorb the oil. The injection remained unchanged for several days. Upon incision clear oil with a camphor odor was evacuated. There was one abdominal wall abscess.

Broncho-pneumonia cases admitted during this time numbered 22. Three who showed many pneumococci in the sputum got camphor. All died. The death rate of this entire group broncho-pneumonia was 41%.

Complications:

1. Alcoholic delirium	2	2 died
2. Morphinism	1	1 died
3. Erysipelas	2	1 died
4. Lung abscess	1	1 died

Untreated pneumonia: There were 12 who entered the hospital within 24 hours of the termination of the disease. None of these had had any adequate treatment and may be classified as untreated. Of these 58% died.

Complications:

Hemiplegia	1 died
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Conclusions.

1. Oily solutions of camphor injected hypodermatically had no demonstrable effect upon the circulation of patients with pneumonia.

2. Camphor had no demonstrable specific effect upon the course of the disease.

3. The mortality from lobar pneumonia was 21%. Broncho-pneumonia 41%; untreated pneumonia 58%.

Capital National Bank Building.

References.

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FOCAL INFECTIONS AND NERVE REFLEXES AS RELATED TO THE EYE.*

By CLARENCE E. IDE, M. D., San Diego.

My reason for selecting this subject is that in the course of my work I spend considerable valuable time arguing with dentists and fellow physicians in the effort to convince them that pathological conditions in the eye many times have their real, original cause, or source, in diseased areas in the teeth especially, or the tonsils, sinuses, ears, parotid glands, or just as surely in foci of infection in other parts of the body, as the gall bladder, appendix, urethra, prostate, stomach, intestines, or elsewhere. In my experience the cases due to irritative reflexes from the teeth, over the fifth nerve, or toxins from foci of infection in the dental alveoli, have far outnumbered those due to reflexes or toxins from other organs. I will go further and claim that the percentage of irritative reflex and toxic conditions, as compared to all pathological conditions occurring in the eye, is greater than that of direct infection by pathological organisms floating in the blood stream or metastasis.

The nerve reflexes interfere with trophic function. Toxins are brought to delicate tissues which are damaged thereby and become the seat of a lesion. Sometimes both act together, the reflex irritation proving to be the predisposing cause and the toxins the exciting cause. It is a case of team work between a predisposing irritation, lowering nutrition, and an exciting poisoning of the tissues involved.

The type of condition set up in the eye as the result of products of bacterial action floating in the blood is described as toxic, and manifests itself as a plastic condition. If the anterior segment of the globe is involved a plastic exudate is evident in the anterior chamber. If the contents of the anterior chamber are aspirated for the purpose of making a culture, the track of the needle is soon the seat of a white plastic exudate. How many cases in which a plastic exudate occluded the pupil after a cataract operation presented such condition, not because the operator did not employ an aseptic technic, but because at that time the habit of investigating the teeth and general system carefully before such operations was not in vogue.

These conditions do not result in destruction of the globe, unless there is superadded direct infection by pathological organisms, but do result in loss of vision in a deplorable number of cases unless the cause is recognized and removed. I have failed to develop cultures in these cases when the exudate was aspirated and transferred to culture tubes of blood serum. Cases could be detailed in which the word of the patient's dentist was taken to the effect that the teeth were in normal condition in which a plastic exudate formed in the anterior chamber after a needling, in which radiographic films disclosed areas of disease in the alveolar sockets of one or more teeth. In other occasional cases it is the tonsils or sinuses or other focus. This simply means that when an operation

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is to be done on an eye the patient ought to be gone over by an internist and syphilographer and given a clean bill as to foci of infection, syphilis and internal gland secretion, while we, or our associates in the surgery of the head should search for possible sources of infection in the head and eliminate them.

That many a case in which foci of infection exist does not show eye symptoms or lesions is beyond the point. Such a patient is lucky as to his eyes, that is all. If not in the eye, harm is done somewhere else in the body, as the heart valves, or lining membrane of the joints. Casey Wood, in the volume on the eye of the Practical Medicine Series for 1918, commenting on a paper of J. J. Wynn, states that he does not believe that the case for this source of disease has yet been definitely made out, stating that because a man has an iritis and a well-marked pyorrhoea, that the cure of the latter is followed by a disappearance of the former, (especially when the former is treated with atropine, hot applications and time) does not prove that the one is dependent on the other. In criticism of this comment of Dr. Wood's I want to say that I would welcome an opportunity of proving the connection by abstaining from all local treatment of such eyes and bringing about a cure of the eye condition by having the teeth alone treated by a competent dental surgeon. I would also welcome an opportunity of proving that the element of time is not necessarily called upon when modern treatment is applied to iritis. It is understood that in such cases as are mentioned above thorough investigation has been made to narrow the cause down to the focal infection in one or more locations. At the eye clinic of the University of California, San Francisco, where I worked for four months after leaving army service, we referred such cases to the internists, the radiographers, the syphilographers and the dentists. When negative reports came from all but the dental surgeons and radiographers it was fair to conclude that by a process of elimination the cause of the plastic condition in the eye had been narrowed down to the pathological conditions found in the teeth—or tonsils in other cases, or sinuses in others, as the case might be. When one has pursued scientific methods in such investigations and has not relied on guessing he is competent to make definite claims. Such remarks as quoted above do harm by influencing men who, rather than doing their own thinking are governed by the opinions of others whose length of experience or reputation appear to lend weight to their claims. The cases of iritis, for instance, which used to require weeks for cure are now healed in days, even hours, by attention to the focus of infection and modern treatment. These remarks also apply to industrial cases in which some ophthalmologist follows old methods of treatment, without ever thinking of focal infection, while the man's vision is going, whereas if he would look into the patient's mouth, examine his nose and refer him to an internist for investigation, he might conserve vision and at the same time bring about an economic saving.

To refer briefly to the nerve supply of the eye and its connections—

NERVES OF THE ORBIT AND EYE.

(I) The ophthalmic nerve, or first division of the Fifth Cranial Nerve, arises from the Gasserian Ganglion, is sensory and supplies the eye ball, lachrymal gland, conjunctiva, the mucous lining of the nasal fossae and the integument of the eyebrow, forehead and nose. It has lachrymal, frontal and nasal branches, viz:

(a) The lachrymal branch sends a filament to the dura mater; communicates with the temporomalar branch of the Sup. Max. nerve; supplies the lachrymal gland and conjunctiva. It communicates with the 6th and 3rd, and sometimes the 4th cranial nerves.

(b) The frontal branch supplies the integument of the upper lid, communicates with the 7th cranial nerve and ends as supratrochlear and supra-orbital nerves.

(c) The nasal nerve has a branch to the ciliary ganglion. The long ciliary nerves of the latter supply the ciliary muscle, iris and cornea. The infratrochlear branch of the nasal supplies the integument of the eyelids, side of nose, conjunctiva, lachrymal sac and caruncula lachrymalis. It communicates with the 3rd cranial nerve by the ciliary ganglion, and with the sympathetic by the same ganglion. Meckel's ganglion communicates with the Inf. Max. branch of the 5th, 9th and 10th cranial nerves and the submaxillary ganglion.

(d) The orbital branch of the 5th nerve ends in temporal and malar branches.

It is to be noted that this branch of the 5th nerve communicates with those cranial nerves supplying all the muscles of the eye, intra as well as extraocular, and with the facial nerve. To mention the structures supplied by this nerve, or by the nerves with which it communicates, over which it can send its reflexes and influence nutrition, is to enumerate all the structures of the eye.

The tooth lesions which have come into my experience as causing these reflexes and toxic lesions are: Impacted teeth, ectopic teeth (as supernumerary tooth in the antrum, unerupted tooth lying horizontally in the alveolus along the roots of neighboring teeth, impacted wisdom teeth lying on their side and developing against the roots of teeth in front) pyorrhoea, alveolar abscess, periodontitis resulting in a thickened club shaped root, gas in improperly filled nerve canals, roots of teeth (molars) pressing on Inf. Max. nerve in mandibular canal, abscess involving this same nerve and canal.

The alveolar abscesses bring about destruction of the bone of the alveolus resulting in osteoporosis or rarefaction or complete absorption of bone. I have a plate showing such a cavity which is very sizable, the roots of three teeth hanging free in it. This is in the lower jaw, two incisors and the cuspid being the teeth involved. Sometimes necrosis of the jaw results with separation of a sequestrum. Several of my cases have shown this and the condition was not discovered until I had films or plates taken in search of a focus of infection. Many times disease of the antrum which is causing eye symptoms is not primarily that but is secondary to disease of the bicuspid beneath. I have found it a waste of time to treat the antrum without having

neighboring teeth filmed to determine whether the antrum condition is primary or secondary.

The literature of this subject is sufficiently voluminous to be interesting. As long ago as 1795 Richter wrote regarding the connection between dental irritation and affections of the eye and ear. In 1817 Bier described a case in which contraction of the visual field was done away with by extraction of a carious tooth. Jonathan Hutchinson, of London, in a systematic paper upon this subject, reported many cases of defective vision, in children and adults, which he reported effectually relieved by the removal of pathological conditions discovered in the mouth. Wright reports the cure of a corneal ulcer by the extraction of a carious upper molar on the same side. McCurdy, in his *Oral Surgery*, writes of visual disturbances and pupillary irregularities, which appeared to be dependent upon grave lesions of the brain, as promptly clearing up after a correction of defects in the teeth.

Dr. Joseph G. Turner, F. R. C. S., writing in the *Practitioner*, London, January 1910, on *General or Remote Infection of Pyorrhoea (Oral Sepsis)* says: One infected tooth may be too much for some people, and in fact, sometimes is, while a mouthful may not hurt others. He lists as resulting from diseased teeth, corneal ulceration, cyclitis, keratitis punctata, secondary cataract.

Reber, of Philadelphia, in *Ophthalmology*, October 1904, under the title, *The Relation of Diseases of the Eye to Those of the Teeth*, concludes: That the ophthalmologist should seek the assistance of the dental surgeon in all cases of unexplainable paralysis of the accommodation, dilation of the pupil, palsy or spasm of the external ocular muscles, rebellious corneal ulcer, phlyctenular disease, lachrymal fistula, orbital cellulitis, abscess, caries or periostitis, and in threatening glaucoma without apparent cause. That the dental surgeon should refer to the ophthalmic surgeon patients that develop any ocular symptoms whatever, and in particular those exhibiting altered pupils or accommodation, lowered vision, painful eyeballs, and swollen lids or orbital margins, with prominence of the eyeball. Reber also says: Eye strain in certain diseases of the eye may give rise to neuralgias along the dental branches of the fifth nerve as though the teeth were the primary offending cause.

Garretson says: A diseased tooth may express itself in any part of the body.

Reber lists as resulting from disease of the teeth, pupillary dilatation, conjunctivitis, cycloplegia or failure of accommodation, absolute blindness (reflex amaurosis), loss of eyeball, even death.

Sir Wm. Lawrence reports the case of a man, aged 30, with blindness due to abscess of a first upper molar. A small splinter of wood was found on the fang on removal of the tooth. Vision returned in this case after blindness of 13 months.

Schmidt-Rimpler and Power, *Nothnagel's Spe. Path. u. Ther.*, 1898, Vol. XII, reports a case of failure of accommodation.

DeWitt, *Am. Jour. Med. Sci.*, Vol. CX; man, aged 31, had blindness of left eye, due to disease of first right upper molar. The tooth was found to be a shell with a fistula extending into the

alveolus. Extraction gave relief and vision returned.

Lardier, *Rec. d'Ophthal.*, 1895. A boy, age 8, had conjunctivitis with cloudy cornea, followed by blindness. Upper bicuspid was removed and vision returned.

De Wecker, *Klin. Monatsbl. f. Augen*, 1866. Woman, seamstress, age 28, had neuralgia of the upper jaw and was blind in the right eye, then blind in the left eye. Pupils were dilated, no reaction to light, eye grounds normal, five carious teeth were drawn and vision returned on that side. Then three teeth were extracted on the other side when vision returned on that side.

Redard, *Rec. d'Ophthal.*, 1886. Case of glaucoma. Sclerotomy done twice with no result. Extraction of carious tooth brought tension down.

Creniceanu, *Klin. Monatsbl. f. Augen*, 1886. Teacher, aged 63, had glaucoma. Iridectomy was done. Relief was temporary. Abscess of lower jaw developed. Tooth was removed. Eye cured.

Schmidt-Rimpler, *Graefe-Saemisch Handbuch*, 1875, says: Glaucoma may be due to dental irritation.

Mooren, *Beit. zur Klin. u. Operat.* Subject, Glaucoma, says: There undoubtedly exist a large number of cases in which glaucoma has been produced by continued irritation of a dental branch of the trigeminus.

Glaucoma is sometimes due to sphenopalatine ganglion irritation, the pain being relieved by injection of the ganglion.

Maddox, in his book, *Ophthalmological Prisms*, 1907, p. 166, states that deficiency of tonic convergence is sometimes due to reflexes through the fifth nerve, especially from carious teeth.

Darrier in his *Ophthalmological Therapeutics*, 1912, p. 275, refers to vesicular or bullous keratitis due to dental reflex.

McWhinnie, in the *N. Y. Med Jour.*, Vol. 98, No. 16, p. 745, refers to alveolar abscesses as cause of eye diseases.

Schmidt-Graefe's *Arch. Ophthal.*, Vol. 14, mentions part played by the teeth in the production of glaucoma. Priestly Smith in *Glaucoma: Its Causes*, etc., 1879, includes diseases of the teeth.

Power includes diseases of the teeth as a cause of neuroparalytic keratitis.

Keyser in *Jahresbericht f. Ophthal.*, 1872, Galezowski, *Arch. gen. der Med.*, Vol. XXIII, Sariguer, *Rev. Medic. de Seville* 1899, Brunshwig, *Jahresber. f. Ophthal.* 1877, Albert & Collyer, *Trans. Odont. Soc. Great Britain*, abstracted in *Correspond.-blatt f. Zahnarzte* 1891, p. 262, all report corneal ulcer as resulting reflexly from disease of the teeth.

Faucheron & Brunshwig, *Rec. d'Ophthal.*, 1881, report iridochoroiditis as so resulting. Schmidt-Rimpler, Power, and Seville in *Trans. Odont. Soc. Great Britain*, 1868, report zonular cataract, while Gell, *St. Louis Med Jour.*, 1873, reports optic atrophy as secondary to disease of the teeth.

As proof of the reflex, if any is demanded, dental neuralgia is observed as being secondary to eye diseases. C. S. Bull in the *International Dental Journal*, 1898, reported pain in the teeth of the upper jaw as a symptom of iritis and cyclitis, also

as a prodromal symptom of glaucoma. This testimony was also furnished by Mooren, Creniceanu, Javal, at the Congress Med., 1886; also by Schmidt-Rimpler and Kniess.

Menschueller, Rec. d'Ophthal, 1819, reported, girl, age 19, had dental neuralgia always on playing the piano. Was found to have a high degree of exophoria. Prism of 4 deg. base in each eye entirely relieved the dental neuralgia. It was found necessary to use the prisms only when playing the piano. Sewing, embroidering, etc., did not cause the odontalgia. It was only when using the eyes for the distance of the music at the piano that the strain was too much to be compensated.

Another case was that of a medical student, age 24, who had left upper dental neuralgia when studying. Was found to have a high degree of exophoria. Prisms two degrees were found sufficient to give relief.

In all these cases we see that irritation of one branch of the 5th nerve may give rise to symptoms in the region supplied by another branch. It is to be noted that eye strain, in certain diseases of the eye, may give rise to neuralgia along the dental branches of the 5th nerve.

Wm. Evans Bruner, A. M., M. D., Cleveland Annals of Ophthalmology, October 1912, writes on the relation of the teeth to the eyes. He mentions asthenopia and eyestrain as resulting from irritation by tooth fillings; also episcleritis and scleritis from alveolar abscess and necrosis of the jaw; also from gold crown irritation.

Coopman in La Clin. Ophthal., July 25, 1905, reports blepharospasm as caused by tooth disease.

The eye lesions which I have seen due to either a 5th nerve reflex or a toxin poisoning secondary to focal infections are:

I. Phlyctenular keratitis which occurs as the result of a nerve reflex, the cause being impacted teeth, gas in a dental nerve canal, due to faulty filling, or other irritative lesion. It is of course necessary to differentiate between the cases due to these causes and those arising in cases having tuberculosis or infected adenoids. A recent personal case was that of a girl aged 6. Tuberculin test was negative, Wasserman test was negative, sinuses normal by radiograph, laryngologist reported nose and nasopharynx normal, (tonsils and adenoids had been removed 3 years previously). Radiograph of teeth showed slow absorption of the temporary set, the films showing two rows of complete teeth (incisors and canines), no absorption of the temporary having occurred. The general condition of this child was excellent. Investigation narrowed the possible cause of the keratitis to the pressure of the permanent teeth on the unabsorbed roots of the temporary. The Wassermann test was resorted to because there was interstitial infiltration of the cornea, a small patch beneath the phlyctenule. The child had had a phlyctenule previously which resulted in an ulcer which left a noticeable scar on healing. Refraction showed hyperopia with hyperopic astigmatism which causing asthenopia was doubtless one element in the chain of causes which gave the child so much discomfort, photophobia being the most troublesome symptom. This is a sample of cases which come to the ophthalmologist all the time.

II. Neuroparalytic keratitis, corneal lesions due to trophic changes, consisting of a minute area of degeneration in which there is a pulpy condition of the tissues at the site of the lesion. If not cured by removal of the cause, in other words, if this condition continues long enough without relief, these areas result in a loss of substance which is generally called an ulcer, but which does not yield bacteria to a smear or culture, unless secondary infection occurs from the outside. These lesions consist of areas of degeneration or necrosis, interstitial, due to constant irritation of the nerves supplying the part, resulting in trophic changes, such irritation being supplied by dental reflex or nasal lesions.

An interstitial corneal lesion occurs, which has been erroneously called corneal abscess, the result of either trophic disturbance, caused by irritative reflex, or the advent of toxins to the part. The tissues do not break down, no ulcer forms, you can watch the lesion for weeks remaining in statu quo ante until the plastic exudate becomes organized and forms an opacity, or is fortunately absorbed. There are no bacteria in the part, there is a deposit, in the substance of the cornea, of the same plastic material which we find in abundance in the anterior chamber in other cases.

III. Phlyctenular conjunctivitis occurs from the same causes as phlyctenular keratitis.

IV. Anterior uveitis evidenced by a violaceous hue under the conjunctiva, circumcorneal injection, Descemetitis, the Descemet's membrane being wrinkled and smeared with plastic exudate, this exudate in excess falling to the bottom of the anterior chamber and forming a false hypopyon, edema of the iris, plastic exudate causing a posterior synaechia, sometimes a dustlike opacity of the vitreous immediately behind the lens, and in some cases an involvement of the lens revealed by a milky appearance of the anterior capsule and dustlike opacity of the lens substance which clears up on treatment. This condition differs from a uveitis caused by the presence of bacteria in the part, with true suppuration, by the fact that it continues for a long time without destroying the globe, the only damage consisting of those lesions due to the organization of the plastic exudate, as posterior synaechia, or occlusion of the pupil. The ciliary injection in these cases is frequently limited to a portion of the circumference of the cornea, sometimes extending only over one eighth or one quarter of this circumference, and the seat of this injection being tender on pressure locally. This condition is caused by toxins brought to the eye from a focal infection. The plastic exudate is sterile, no growth occurring on culture.

V. Iritis, or iridocyclitis, generally being part of a condition better called anterior uveitis or iridochoroiditis.

VI. Patches of scleritis or episcleritis revealed by circumscribed patches of redness and a violaceous hue. These are recurrent coming in one recent case weekly.

VII. Vitreous opacity, dust-like in character, occurs. This is seen in conjunction with other lesions such as uveitis, retinitis or choroiditis.

VIII. Contrary to what is the commonly ac-

cepted idea or opinion, retinitis is a common disease. If careful ophthalmoscopy is done in each case which comes to us, under mydriasis, the percentage of those presenting areas of colloid degeneration in the retina, which are evidence of past inflammation is large. When these are discovered in active condition a process of elimination of possible causes by the employment of the Wassermann, tuberculin and other tests, such as the complement fixation, and by thorough examination by an internist will frequently narrow the possible causes down to one and that a toxæmia, the source of the toxin being found in a focal infection. In the largest number of cases in my experience this focus is in the teeth. In other cases the retinitis is caused by the poison of the acute infectious diseases as mumps, scarlet fever, mastoiditis, etc. Recent experience among soldiers furnished me with cases of retinitis secondary to mumps and mastoiditis due to streptococcus infection.

IX. Neuroretinitis occurs less commonly than definite circumscribed areas of retinitis. Recall the report of contraction of the visual field disappearing on removal of a focal infection. In one recent case of the writer's there was well marked neuroretinitis in which vision was almost completely lost. I believe this was due to the fact that a diagnosis of etiology had been made as sun exposure, the soldier having looked at the sun without smoked glass during an eclipse. My predecessor had put him on iodide of potash without making further search for cause.

X. Glaucoma. The presence of this condition always demands a search for a possible cause in a focal infection or a reflex from irritation of the dental branches of the trigeminus.

XI. Irregularity of the pupil evidencing weakness of segments of the iris. This condition is found when no history of past iritis with posterior synechia can be elicited.

XII. Paresis of accommodation due to nerve reflex.

XIII. Paretic, irritative (sympathetic) dilatation of the pupil.

XIV. Retrobulbar optic neuritis.

XV. Paresis or spasm of the extraocular muscles.

XVI. Imbalance of the ocular muscles—the phorias. Maddox—Convergence Insufficiency.

Condition reported by others which I have not seen are, further:

XVII. Zonular cataract.

XVIII. Lachrymal fistula.

XIX. Reflex amaurosis.

XX. Optic atrophy.

XXI. Blepharospasm.

XXII. Orbital cellulitis.

XXIII. Orbital abscess.

XXIV. Orbital caries.

XXV. Orbital periostitis.

Besides these lesions already enumerated we find a group of conditions such as simple eye pain, supraorbital neuritis or neuralgia, photophobia, lachrymation with epiphora, due to irritative nerve reflexes.

Some of these conditions are prone to appear in recurrent attacks. Some give a history of "blood-

shot eyes" appearing every so often, or patches of scleritis or episcleritis, or plastic iritis, or attacks of blurred vision. Finally the eyes fail to recover so easily from these attacks and the patients present themselves with the beginnings of a more serious condition, when degenerative changes have set in.

Such conditions are found in industrial cases naturally. The predisposing cause, the focal infection or dental irritation, has been acting for some time, then an injury, the exciting cause, is added and a serious condition presents. As an example, I have recently treated a case of anterior uveitis in a man whose left eye had been injured some months previously by a piece of stone flying from a pickaxe. One ophthalmologist treated him for a long time failing to heal the resulting ulcer. Then the man was sent to Los Angeles for treatment. Finally the ulcer was healed with a macular scar involving the whole pupillary area. In April he was sent to me with an anterior uveitis, the cornea being hazy, Descemet's membrane wrinkled and covered with plastic exudate, pupil fixed, iris muddy, pupil dilated to 6 m. m. (not by atropine), globe red and presenting a deep violaceous hue. There was intense lachrymation and photophobia. The condition was characteristic. If it had been an infection with pathological organisms locally the eye would have been lost. But it was one of the plastic cases caused by toxins. Examination of the mouth showed a foul condition; extreme pyorrhoea which had existed for years. The man had never used a tooth brush. The eye cleared up perfectly when the teeth had been attended to, several of them extracted. If the ophthalmologist who treated the ulcer had looked into the man's mouth the latter would, I feel sure, not have lost 14/15 of the vision of that eye. Of course the ulcer was caused by the action of pathological organisms, but the reason two oculists could not heal it for several months was that the tissues had had their resistance so lowered by the action of toxins they could not respond to treatment. I can recall several industrial cases in which this same state of affairs obtained.

The time will come when radiography of the teeth, sinuses and other suspected regions will be even more common than at present. We should labor to bring about a reduction of the expense of securing radiographic films and plates. It is common for the taking of the plates to be done by assistants, which reduces it to a mechanical procedure. This without interpretation of the plates ought not to be so very expensive. I prefer to interpret plates for myself.

This consideration also brings into relief the great value of group clinics. In order to make an accurate, scientific diagnosis of an eye condition it is frequently necessary to make a tuberculin test, a Wassermann test, a complement fixation test, to have X-rays and a medical examination. A special maximum fee for each of these is beyond the financial ability of a fair percentage of those who need them. Until such arrangements are made as will allow of the securing of these benefits at a reasonable, or rather a cost possible to meet, we are not going to conquer these conditions.

Another important consideration in connection

with this subject is the fact that we must break away from what I call text-book treatment and follow what in contradistinction might be called monograph treatment. For example—the appearance of a case of iritis means often the use of atropine, hot applications and time—nothing more unless a search is made for syphilis or gonorrhoea as a cause. At the present time the appearance of a case of iritis should mean more than this. Text books are written which furnish not only the actual knowledge and opinions of the author, but include also a mass of material copied from older works back to the beginnings of a specialty. Acquisition of knowledge regarding etiology ought to involve the creation of new methods of treatment. Each pathological condition we meet has relation, through intricate ramifications, with various possibilities as to causation and means of relief. By the time a work is written and published therapeutic possibilities have developed beyond what is recorded therein. Then, too, some valuable additions to our knowledge, for some reason, lie buried away unnoticed by the many. As an example, what may be accomplished by the use of subconjunctival injections is evidently not the possession of the many. The use of this valuable agent is occasional or exceptional, taking ophthalmologists as a whole, to judge from what I observe from day to day, whereas it ought to be in daily, familiar use.

Time allowance forbids the detailing of individual cases, which would be tedious at best. Suffice it to state that not a day passes but what some such cases present themselves for relief.

Those who pass over these claims with a laugh and shrug of the shoulders, or claim that this matter of focal infection is overdone are due to wake up later and find themselves out of the running. Just as the Wassermann test has effectually reduced the number of idiopathic conditions we formerly studied, and the tuberculin test has further contributed to this end, the study of the damage done to delicate tissues by toxins from focal infections has cleared up the causation of some conditions concerning which we were formerly forced to say—I don't know.

WILL THE WAR INFLUENCE THE PRACTICE OF MEDICINE, AS A BUSINESS *

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We hear much of reconstruction after the war. The meaning of the term, as applied to medicine, is quite as vague as when applied to business. No one knows its significance. Business men either fear or hope for certain changes. The ones they fear they call destructive; those hoped for they term re-constructive. Leaders of medical thought and writers of editorials in Medical Journals have expressed the conviction that the war has resulted, or will result, in certain profound, though as yet undefined, changes in the

relations of physicians to each other, to the public or both. Among other points, stress has been laid upon the supposed facts that returning soldiers and their friends will demand a higher grade of professional ability than they had been accustomed to receive prior to the war; that more intense specialization will be required; that fewer fads and isms will be tolerated; that better hygienic conditions will be demanded; that owing to experience in camp and field physicians themselves have undergone inscrutable changes for the better; that owing to these and other considerations the practice of medicine, as a business, must adapt itself to new conditions. To most of these premises I respectfully dissent.

In round numbers some 30,000 members of the American Medical Association have entered the army in some capacity. Most of them have received a few months of intensive training along lines that would fit them for adaptation to army requirements. Many of these men will return bigger and broader minded; a few will have deteriorated; most of them will be about what they were before. In many cantonments the standards have been ideal; in others, the reverse. In each instance the result has depended, largely, upon the commandant, upon his executive ability and his power to correlate the forces at his disposal. The same medical men who attended the soldiers before the war cared for them during their period of service and will look after them in the future. It should be remembered that gynaecology, obstetrics, pediatrics and many other departments have, of necessity, been neglected by the mass of army doctors who have hitherto, and who must in the future, depend upon that sort of work. Undoubtedly, certain fields of medical endeavor have been stimulated by army experience but the average doctor will be neither better nor worse. I have talked with many returned soldiers. They have expressed the same ideas of medical men we have heard for years; the same idolatry, the same bitter criticism. Christian Science and occult healers will continue to enjoy the usual percentage of votaries.

Most of the returning doctors will go back to former locations. For a few months they will enjoy a little prestige and their offices will be popular. In time they will sink or rise to their own level, just as before the war. Some thousands will seek new fields; they have broken old associations and the lure of change will attract them. Many will make good but the average man will find it as difficult to meet competition and to build up in the new as in the old environment.

I do not believe that so-called "reconstruction" will materially affect the business side of medicine. There is, however, a type of reconstruction badly needed. We are prone to condemn the man who practices medicine for money. Science is so fascinating; the alleviation of suffering so enticing that we strive for professional repute and a large clientele regardless of financial return. We forget that other men, working in other lines, are as humanitarian and as altruistic as we. The

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